NOTE XIII.

ON TWO NEW SPECIES OF THE GENUS ACANTHODRILUS, PERR. [1]) FROM LIBERIA.

BY

Dr. R. HORST.

Among the Invertebrates collected by Büttikofer and the late Sala during their journey in Liberia [2]), I found two large earthworms, belonging to the genus *Acanthodrilus* [3]). Though the specimens are not very well preserved, I will describe them as good as possible, our knowledge of this interesting genus of Lumbricidae being rather scanty and only based upon the examination of four species: *A. obtusus* Perr. and *A. ungulatus* Perr. from New-Caledonia, *A. verticillatus* Perr. from Madagascar [4]) and *A. kerguelenensis* R. Lank. from Kerguelen Island [5]).

1. *Acanthodrilus Schlegelii*, nov. spec.

The largest of the two worms measures 750 m.m. in length; its colour on the dorsal side is violet-brown, on the ventral side greyish. The setae are arranged in four series

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[1]) Nouv. Archiv. Muséum d'Hist. Nat. Paris. T. VIII, p. 85.

[2]) Confer. Notes fr. the Leyden Museum. Vol. III, p. 53.

[3]) Büttikofer has been mistaken in ranging them into the genus *Lumbricus* (Tijdschr. Aardrijksk. Genootschap. Bijblad N°. 12, 1884, p. 37).

[4]) loc.. cit.

[5]) Philos. Transactions. Vol. 168, p. 264.

of pairs on the ventral side of the body, the distance between the two median pairs being somewhat smaller than that between the median and lateral ones. The cephalic lobe is oval, with its broadest end directed forwards; it extends not only over the buccal segment, but also into the second (first setigerous) ring, so that the buccal segment seems to be provided with setae. There is no trace of a clitellum.

Between the 13th and 14th segment the first dorsal pore is to be found. At the ventral side of the 17th, 18th and 19th segment, which are shorter than the preceding and following rings, a depressed area is to be observed, surrounded by an oblong wall with rounded angles. In each angle of this area, on the 17th and 19th segment, a pair of penial setae is situated; they are placed just in the series of the median pairs, to which they are corresponding. These specially modified setae have a length of 4 m.m., they are slightly curved, with the proximal end swollen, and the distal end obtusely pointed. Their external half shows a particular appearance, due to the presence of densely spread small pits. At the internal side of the 17th and 19th ring, close to each pair of penial bristles, an undulated glandular tube is situated, the prostata. In the 12th and 13th segment, upon the posterior side of the mesentery, a pair of oblong flat organs is fixed, probably representing the testes; however this could not be made out with certainty, as I could not find neither the spermatozoa nor the vasa deferentia. On the boundary-line between the 7th and 8th, the 8th and 9th segment, close to the ventral mesial line, a pair of small oval vesicles is situated, corresponding to the copulatory pouches.

In the 15th, 16th and 17th segments the alimentary canal is provided on each side with reniform coeca, the surface of which is divided by parallel grooves in numerous small lobes; by a branch, given off from the dorsal vessel, these glands are provided with a great number of bloodvessels. No doubt they belong to the same category as the glands described by Beddard in *Pleurochaeta* [1]) and *Typhaeus* [2]).

Segmental organs have not been observed, as is the case in the species described by Perrier; Ray Lankester however has represented them in a diagrammatic section of *A. kerguelenensis*, without mentioning them in his paper with a single word. In my specimen I found only in the 16th, 17th and 19th segment on the middle of each ring a transverse series of slender glandular tubes; highly magnified these tubes present a strong resemblance with true segmental organs, being likewise composed of several morphologically different parts.

Hab. Liberia.

2. *Acanthodrilus Büttikoferii*, nov. spec.

The other specimen differs from the foregoing in so many characters, that I must consider it as belonging to another species.

It measures 320 m.m. in length. There is a distinct clitellum, extendig from the 13th to the 19th segment. These segments are glandular, thickened, except on the ventral side of the 17th, 18th and 19th ring, over an oblong area, divided by a groove in two portions. The setae are arranged in four double series; in the anterior portion of the body the pairs of bristles are placed rather closely near each other, but in the posterior portion they are separated by about the double distance, the lateral pairs being so placed not on the ventral but on the lateral side of the body. It the 17th and 19th segments the medial pair of bristles is modified in penial setae; consequently in our species the penial setae are situated within the clitellum, whereas in *A. obtusus* and *A. ungulatus* they are placed behind, and therefore *Acanthodrilus* is regarded by Perrier as one of the Postclitelline Lumbricoids. In

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1) Transact. Royal Society of Edinburgh. Vol. XXX, 1883, p. 481.

2) Annals and Magazine of Nat. History. Oct. 1883, p. 219.

regard of this fact the question may be put, as already done by Beddard, in considering the systematic position of *Pleurochaeta*[1]) — which resembles in many characters the postclitelline *Perichaeta*, but has intraclitelline generative openings — if Perrier's system, how extremely convenient it may be, is not too artificial and if he may base a classification on a glandular organ, which is often rather variable in its extension, and not always distinctly limited by the same segments.

The length of the penial setae is 2 m.m. They are slightly curved, slender, with their distal extremity swollen and terminating in a sharply bent bifurcated point; this point is envelopped by a membraneous prolongation of the sides of the seta, like by a cap. Moreover these bristles are covered nearly over one fourth of their length with small triangular spines, strongly resembling the penial setae of *A. ungulatus* Perr. At the innerside of the 17th and 19th ring we find close to each bundle of penial setae a slightly coiled, yellow-coloured, glandular tube, the prostata. I have not been able to observe the vasa deferentia, joining with these prostatic glands, notwithstanding in the 13th segment distinct testes were present; on the posterior side of the 12th mesentery, on both sides there is a flat lobed sac, containing incompletely developed spermatozoa. On the boundary-line of the 7th and 8th, the 8th and 9th ring are situated the openings of two pairs of copulatory pouches, corresponding to the medial series of setae; they are small oval vesicles, deeply imbedded in the muscular coat. In the 14th, 15th and 16th segment the intestine is provided with a pair of reniform coeca, quite like in *A. Schlegelii*; it is surprising that these coeca, being present in both our specimens, have not been observed by Perrier in the species described by him. On each side of the pharynx in the 6th segment, extending into

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1) loc. cit. p. 502.

the 7th, there is a large tufted glandular organ which receives a branch from the dorsal vessel and is attached to the body-wall and the pharynx by tendineous bands; it is composed of a number of looplike coiled tubes, and corresponds probably with similar tufted glands, found in the anterior segments of several *Megascolex*-species.

Finally the strong development of the mesenteries 6 to 9 may be mentioned; they are prolonged far backwards, and fitting like cups one into the other, form a continuous covering of the alimentary canal on that point, like in *Anteus gigas* Perr. 1) and *Perionyx MacIntoshii* Bedd. 2)

Hab. Liberia.

Leyden Museum, January 1884.

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1) loc. cit. pl. I, fig. 13.
2) loc. cit. p. 219.